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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,649	11/02/2000	Sinha Navin Kumar	JP920000155US1	4492
39903	7590	03/02/2005	EXAMINER	
ANTHONY ENGLAND PO Box 5307 AUSTIN, TX 78763-5307			CHANG, SUNRAY	
			ART UNIT	PAPER NUMBER

2121

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/704,649

Applicant(s)

KUMAR, SINHA NAVIN

Examiner

Sunray Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. This office action is in responsive to the paper filed on February 25<sup>th</sup>, 2005.
2. Claims 1 – 20 are presented for examination.

Claims 1 – 20 are rejected.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1 – 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Mauricio Breternitz, Jr. et al. (U.S. Patent No. 6,381,739, and referred to as Breternitz here in after).

4. Regarding **Independent claim 1**,

Breternitz teaches:

- A method for optimizing computer software, call statement and a procedure which is callable by the call statement [Col. 2, Lines 40 – 57, see also Abstract, Col. 6, Lines 20 – 23 in Detail Descriptions] and which has code branches and control flow code for directing program flow to the code branches. [Computer program, Col. 1, Line 26 and Col. 2, Line 4, see also Col. 16, Line 64 – Col. 17, Line 11 in Detail Descriptions]
  - (a) analyzing the procedure to identify said control flow code and said code branches; [Col. 2, Lines 4 – 6, see also Col. 17, Lines 42 – 53 in Detail Descriptions]
  - (b) identifying for each said code branch a new procedure containing the respective code branch; Identifying step [Col. 2, Lines 10 – 13, see also Col. 17, Lines 12 – 29 in Detail Descriptions]
  - (c) recording a list of data entries corresponding to the respective new procedures, each entry comprising a data item identifying the respective new procedure and a data item representative of the branch conditions under which said control flow code directs program flow to the associated code branch; [Col. 2, Lines 14 – 15, and Col. 2, Lines 41 – 45, see also Fig. 10 – 12, and Col. 10, Line 47 – Col. 11, Line 6 in Detail Descriptions]
  - (d) for the or each call statement, scanning the entries in said list to determine one for which there is correspondence between said branch conditions and call parameters directed to said control flow code by the call statement and modifying the call statement to replace the call to the original procedure by a call to the corresponding new procedure. [Col. 2, Lines 40 – 51, and Col. 2, Lines 56 – 60, see also Fig. 11, and Col. 10, Line 47 – Col. 11, Line 6 in Detail Descriptions]

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5. Regarding **dependent claim 2**,

Breternitz teaches:

- constructing a control flow graph for the procedure; [Col. 1, Lines 26 – 45, see also Col. 17, Lines 12 – 14 in Detail Descriptions]
- a branching node representative of said control flow code and further nodes representing respective ones of said code branches. [Fig. 14 – 17]

6. Regarding **dependent claims 3 and 10**,

Breternitz teaches:

- two or more code branches and an item of control flow code for directing program flow to those code branches and wherein between said steps (a) and (b); [Col. 2, Lines 4 – 17, see also Fig. 10, and Col. 6, Lines 54 – 60 in Detail Descriptions]

(e) for each item of control flow code, before identifying any new procedure in accordance with step (b) of the method, checking for compliance between one or more predetermined rules for the software and the software should step (b) and following steps of the method take place; [Col. 3, Lines 10 – 29, see also Fig. 10, and Col. 33, Lines 25 – 39 in Detail Descriptions] and

(f) for that item of control flow code, continuing with step (b) and the following steps of the method only in the event of such compliance. [Col. 3, Lines 10 – 29, sees also Fig. 10, and Col. 33, Lines 25 – 39 in Detail Descriptions]

7. Regarding **dependent claims 4 and 11**,

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Breternitz teaches:

- Cost-analysis algorithm based on predetermined rules about the length of the software. [Col. 2, Lines 47 – 59, see also Col. 6, Lines 14 – 35, and Col. 13, Lines 1 – 31 in Detail Descriptions]

8. Regarding **dependent claims 5 and 12**,

Breternitz teaches:

- Optimizing the new procedure by propagating that constant through the new procedure. [Col. 2, Lines 44 – 57, see also Col. 33, Lines 25 – 49 in Detail Descriptions]

9. Regarding **dependent claims 6 and 13**,

Breternitz teaches:

- analyzing a call statement, calling parameters and an associated new procedure [Col. 2, Lines 40 – 57, see also Col. 6, Lines 20 – 23 in Detail Descriptions] to determine if they are compliant with predetermined in-lining rules and, if they are so compliant; [Col. 3, Lines 3 – 16, see also Col. 13, Lines 25 – 39 in Detail Descriptions]
- replacing said call statement by a copy of the new procedure. [Col. 3, Lines 42 – 65, see also Col. 6, Lines 14 – 35 in Detail Descriptions]

10. Regarding **independent claims 7, 14 and 18**,

Breternitz teaches:

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- A method for optimizing computer software, call statement and a procedure which is callable by the call statement [Col. 2, Lines 40 – 57, see also Abstract, Col. 6, Lines 20 – 23 in Detail Descriptions].

(a) constructing a control flow graph for the procedure, the control flow graph comprising one or more branching nodes each representative of respective control flow code and, for each branching node, two or more further nodes representing respective code branches to which program flow is directed by the branching node; [Col. 1, Lines 26 – 46, see also Fig. 14 – 17, and Col. 17, Lines 12 – 14]

(b) considering each node in turn and, if the node being considered is a branching node and if the branching condition for that node by which the respective control flow code directs program flow to the respective code branches is able to be represented as a function only of formal parameters and global variables, identifying a new procedure for which the flow control mph comprises all the nodes in the path from the first node of the procedure to the node being considered, the node being considered, and the whole of the portion of the control flow graph led to directly or indirectly from the node being considered; [Col. 2, Lines 4 – 60, Fig. 1, see also Col. 16, Line 28 – Col. 17, Line 11 in Detail Descriptions]

(c) recording a list of data entries corresponding to the respective new procedures, each entry comprising a data item identifying the respective new procedure and a data item representative of the corresponding branching condition; [Col. 2, Lines 14 – 42, and Col. 2, Lines 41 – 45, see also Col. 10, Line 47 – Col. 11, Line 17 in Detail Descriptions]

(d) for each said call statement, scanning the entries in said list to determine one for which there is correspondence between said branch condition and call parameters supplied by the call

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statement; [Col. 2, Lines 29 – 57, see also Fig. 11, Col. 10, Line 47 – Col. 11, Line 6 in Detail Descriptions] and

(e) modifying the call statements to call said new procedures. [Col. 2, Lines 56 – 60, Col. 3, Line 34 – 37, see also Col. 14, Lines 44 – 56 in Detail Descriptions]

11. Regarding **independent claims 8 and 15**,

Breternitz teaches:

- A method for optimizing computer software, call statement and a procedure which is callable by the call statement [Col. 2, Lines 40 – 57, see also Abstract, Col. 6, Lines 20 – 23 in Detail Descriptions] and which has code branches and control flow code for directing program flow to the code branches. [Computer program, Col. 1, Line 26 and Col. 2, Line 4, see also Col. 16, Line 64 – Col. 17, Line 11 in Detail Descriptions]

(a) analyzing the procedure to identify said control flow code and said code branches; [Col. 2, Lines 4 – 6, see also Col. 17, Lines 42 – 53 in Detail Descriptions]

(b) identifying for each said code branch a new procedure containing the respective code branch; Identifying step [Col. 2, Lines 10 – 13, see also Col. 17, Lines 12 – 29 in Detail Descriptions]

(c) recording a list of data entries corresponding to the respective new procedures, each entry comprising a data item identifying the respective new procedure and a data item representative of the branch conditions under which said control flow code directs program flow to the associated code branch; [Col. 2, Lines 14 – 15, and Col. 2, Lines 41 – 45, see also Fig. 10 – 12, and Col. 10, Line 47 – Col. 11, Line 6 in Detail Descriptions]



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(d) for each said call statement, scanning the entries in said list to determine one for which there is correspondence between said branch condition and call parameters supplied by the call statement; [Col. 2, Lines 29 – 57, see also Fig. 11, Col. 10, Line 47 – Col. 11, Line 6 in Detail Descriptions] and

(e) modifying the call statements to call said new procedures. [Col. 2, Lines 56 – 60, Col. 3, Lines 34 – 37, see also Col. 14, Lines 44 – 56 in Detail Descriptions]

12. Regarding **dependent claim 9**,

Breternitz teaches:

- analyzing means is operable for storing data representing the nodes and edges of a control flow graph for the procedure, said nodes including a branching node representative of said control flow code and further nodes representative of respective ones of said code branches. [Col. 2, Lines 5 – 11, and Lines 42 – 56, see also Fig. 14 – 17, and Col. 17, Lines 12 – 14 in Detail Descriptions]

19. Regarding **dependent claims 16 and 19**,

Breternitz teaches:

- Machine readable storage medium storing computer code. [Col. 6, Line 36 – 53 in Detail Descriptions]

20. Regarding **dependent claims 17 and 20**,

Breternitz teaches:

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- Machine readable storage medium storing computer code. [Memory which contains all computer software and data as taught herein, Col. 6, Line 36 – 39 in Detail Descriptions]
- Available for downloading from a computer connected to a computer network. [External storage maybe floppy disks, magnetic tapes, CD-ROM, a network connection, or even other computer, Col. 6, Line 45 – 53 in Detail Descriptions]

**Response to Amendment**

**Claim Rejections - 35 USC § 102**

25. Applicants' arguments over all regarding "Breternitz does not anticipates a call statement and does not disclose call parameter" (Page 12 – 15) is disagreed with. Based on applicants' specification, "call statement" has been defined as calling a procedure function, and "call parameter" has been defined as variables passed to the code branches by the control flow code are often also shown adjacent the arrows. Breternitz anticipates "call statement" [function calls, Col. 16, Line 64 – Col. 17, Lines 11], and "call parameters" [1310, Fig. 31], can be used to explain the descriptions in Breternitz, Col. 2, Line 40 – 60, which has been used to make the rejection, and the rejection stand still.

Further, Applicants arguing the "Back Ground" and "Detail Descriptions" of Breternitz are different references. Examiner provides both "Back Ground" and "Detail Descriptions" portions that describe every single matter in claims as set forth in current office action.

26. Applicant's argument regarding independent claims, "Breternitz does not disclose analyzing the procedure to identify said control flow code and said code branches" (page 11) is

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disagreed with. Breternitz discloses “execution flow” can be analyzed, and in Fig. 1, Breternitz discloses “code branches” in sections cited by examiner. The rejection remains.

27. Applicant’s argument regarding independent claims, “Breternitz does not disclose identifying for each said code branch a new procedure containing the respective code branch” (page 11 – page 12) is disagreed with. Breternitz discloses “creates a trace data file” in Fig. 2 to records the execution flow of the basic code blocks (program) in Fig. 1 in sections cited by examiner.

The rejection remains.

28. Applicant’s argument regarding independent claims, “Breternitz does not disclose “a list of data entries corresponding to the new procedure”” (page 12) is disagreed with. Breternitz discloses a “trace file” of Fig. 2 is analyzed to “obtain execution flow structure” of Fig. 3 in sections cited by examiner.

The rejection remains.

29. Applicant’s argument regarding independent claims, “Breternitz does not disclose “scanning the entries and modifying the call statement”” (page 13) is disagreed with. Breternitz discloses a “scanning the trace data in Fig. 2” and “to result in the completed data structure in Fig. 3” in sections cited by examiner.

The rejection remains.

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30. Regarding dependent claims, applicants' arguments are disagreed with, the examiner's responses as set forth in item 5 – 20 of current office actions.

**Conclusion**

31. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunray Chang whose telephone number is (571) 272-3682. The examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-746-3506.

Sunray Chang  
Patent Examiner  
Group Art Unit 2121  
Technology Center 2100  
U.S. Patent and Trademark Office



**Anthony Knight**  
**Supervisory Patent Examiner**  
**Group 3600**

February 25, 2005